



# STUDIES

A Special Report Series by  
THE STATE CENTER FOR HEALTH AND ENVIRONMENTAL STATISTICS  
P.O. Box 29538, Raleigh, N.C. 27626-0538

No. 78

December 1993

## HOSPITALIZATION AMONG ELDERLY NORTH CAROLINA RESIDENTS FISCAL YEAR 1990

by

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### INTRODUCTION

As North Carolina's elderly population has grown, and as health care expenditures have increased, understanding the health problems and health care needs of our older citizens has become increasingly important. From 1971 to 1991 the population of North Carolinians aged 65 years and older increased 88 percent. A 1989 SCHES Study examined mortality among persons aged 65 and older as it relates to the health of that population.<sup>1</sup> Hospital discharge data for persons aged 65 and older are presented here as another indicator of the health problems and health care needs of older North Carolinians.<sup>2</sup> While constituting only 12 percent of North Carolina's total population, persons aged 65 and older accounted for 27 percent of inpatient hospital discharges<sup>3</sup>, 38 percent of hospital bed days<sup>4</sup>, and 40 percent of hospital charges (fiscal year 1990). Excluding newborns from the data allows comparisons to national figures<sup>5</sup>. Older persons accounted for 31 percent of hospital discharges (US 34%), 43 percent of hospital bed days (US 45%), and 42 percent of hospital charges (US data not available).

This report examines inpatient hospital usage among elderly persons in North Carolina during fiscal year 1990 based on age group, principal diagnosis, and county of residence. Hospital usage and resource consumption were measured by 1) number of discharges, 2) discharge rate, 3) hospital length of stay, and 4) charges per hospital visit. This report focuses on North Carolina residents ages 65 and older. Tables and maps detailing age groups and county of residence can be found in the Appendices.





## DATA AND SOURCES

The data consist of inpatient hospital discharge records for North Carolinians ages 65 and older for October 1989 through September 1990, obtained from the North Carolina Medical Database Commission. The primary source document for information in the Commission's database is the UB-82 claim form used by hospitals to bill payers. This form includes patient's county and state of residence, patient's age and sex, payer identification, principal and other diagnoses, length of stay, and total hospital charges per stay. The UB-82 does not collect data on patient's race, patient's income, or causes of injuries.

Population bases were obtained from the State Data Center, Office of State Planning. Discharge rates are presented per 1,000 population ages 65 and over.

Diagnoses are grouped into 33 discrete conditions listed in the *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD-9-CM). The groupings were narrowed to focus on recognized conditions of public health importance, for many of which risk factors or potential interventions are known. Some analyses focus on only the principal\* diagnosis, and others on any of the five possible diagnoses listed.

Payers were divided into five classes: Medicaid, Medicare, Private or Employer Provided, Self Pay/Indigent/Charity, and Other. Private or Employer Provided consists of Blue Cross and Blue Shield, CHAMPUS, State Employee Health Plan, any health maintenance organization, commercial insurance, administered plans, and Workmen's Compensation. Self Pay/Indigent/Charity also includes payments by the North Carolina Division of Health Services Purchase of Care Program.

## SELECTED RESULTS

In fiscal year 1990, 228,252 hospitalizations occurred among the elderly. Nineteen major categories of conditions accounted for 51.2 percent of all discharges. Table 1 gives discharge rates, average hospital lengths of stay, and average hospital charges per stay for three age groups. The discharge rate rose with age from 230.2 per 1,000 at age 65 to 74 to 446.9 per 1,000 at age 85 and older. Average hospital length of stay rose from 10.7 days for 65-74-year-olds to 12.1 days for 75-84-year-olds; the average hospital length of stay for ages 85 and older was also 12.1 days. Average hospital charges per stay decreased with age from \$8,770 for 65-74-year-olds to \$7,854 for persons aged 85 and older.

**TABLE 1**  
**INPATIENT HOSPITAL UTILIZATION**  
**NORTH CAROLINA RESIDENTS BY AGE GROUP**  
**OCTOBER 1989 — SEPTEMBER 1990**

	<u>Number of Discharges</u>	<u>Discharge Rate</u>	<u>Average Days Stay</u>	<u>Average Charges per Stay</u>
Ages 65-74	111,167	230.2	10.7	\$8,770.45
Ages 75-84	85,150	338.6	12.1	\$8,587.94
Ages 85 and older	31,935	446.9	12.1	\$7,853.74
Ages 65 and older	228,252	283.3	11.4	\$8,574.11

\*The principal diagnosis is that deemed, at discharge, to have been responsible for the patient's admission to the hospital.



## *Principal Diagnosis*

Hospital use measures are presented for selected principal diagnoses in Table 2. The categories shown accounted for more than half of the discharges (51%), days of care (59%), and hospital charges (54%). Heart disease was the most frequent reason for hospitalization among persons aged 65 and older (61.0 hospitalizations per 1,000 persons). These patients had an average length of stay of 8.1 days and used 15 percent of the total days of care. Heart disease accounted for 23 percent of hospital charges incurred by persons aged 65 and older. The heart disease discharge rate was 30 percent higher for males than for females. While females had a slightly higher average length of stay, the average cost per hospitalization for heart disease was 22 percent higher for males.

Cancer was the second leading principal diagnosis with 21.0 hospitalizations per 1,000 persons, which was 7.4 percent of total discharges. The average length of stay for persons discharged with cancer was 10.9 days; they used 7.1 percent of the total days of care. These hospitalizations accounted for 8.7 percent of elderly hospital charges. The male discharge rate for cancer was 70 percent higher than that for females, and while females tended to have longer hospital stays, they incurred lower hospital charges. The most frequent elderly hospitalizations for cancer were lung, breast and prostate.

Cerebrovascular disease and pneumonia/influenza were the third and fourth most frequent diagnoses with rates of 17.5 and 16.2 hospitalizations per 1,000 persons, respectively. For these conditions, males had higher discharge rates, shorter lengths of stay, and higher hospital charges than females.

Patients with a principal diagnosis of mental disorders had a particularly long average length of stay (63.6 days). They used 17.5 percent of total

days of care and incurred 3.2 percent of total hospital charges. While discharge rates and the average hospital charges per stay were very similar for males and females, the average hospital stay for males was 62 percent longer than that for females.

Tables detailing hospital resource consumption by principal diagnosis for the age groups 65-74, 75-84, and 85 and older can be found in the Appendices.

## *Comorbid Conditions*

Comorbid conditions are recorded diagnoses that coexist at time of admission, or develop subsequently, and affect the length of stay and/or the treatment received. The ratios of the number of discharge records that had any mention of a given condition to the number that had that same condition listed as the principal diagnosis are presented in Table 3. A low value indicates that the condition was usually the principal cause of the hospitalization. A high value indicates that the condition usually relates to hospitalization as a contributing condition rather than as the main cause. For hospitalizations to all persons ages 65 and older, the five highest ratios were for hypertension (48.1), nutritional disorders (26.6), thyroid gland disorders (22.6), Alzheimer's disease (17.2), and glaucoma (12.7). When taken by age group, these five conditions continued to constitute the highest ratios.

## *Payer Class*

Medicare was the principal payer for 95 percent of hospitalizations to residents ages 65 and older (Table 4). Length of hospitalization and average hospital charges varied according to principal payer. The average days stay for Medicaid patients was 133.9, much higher than that of the other payer classes: Selfpay/Indigent/Charity (84.2), Medicare (10.1), and Private or Employer provided (9.3). The average hospital charges



were \$12,421 for Medicaid, \$8,957 for Private or Employer provided, \$8,942 for Selfpay/Indigent/Charity, and \$8,504 for Medicare.

## DISCUSSION

Although persons ages 65 and older comprise only 12 percent of the population in North Carolina, they account for 40 percent of hospital costs. These figures are comparable to national statistics<sup>6</sup> and the findings in other states<sup>7</sup>. The Census Bureau estimates that the elderly population will increase to approximately 22 percent of the population by the year 2030.<sup>8,9</sup> As the population ages, an even greater percentage of hospital costs will be attributed to the elderly.

In the 1989 SCHES Study of mortality among persons aged 65 and older<sup>1</sup>, the leading causes of death were heart disease, cancer, cerebrovascular disease, pneumonia/influenza, and chronic obstructive pulmonary disease. These diseases are also the leading causes of hospitalization in this age group.

The number of hospital discharges, the rate of discharges, the average days of stay, and the average hospital charges all reasonably indicate the burden of hospitalization attributable to each principal diagnosis. However, the contribution of comorbid conditions to hospitalization is probably underestimated by the number of discharges and the ratio of all-listed diagnoses to principal diagnoses. The hospital discharge records can accommodate only five diagnostic codes, and all five are used in 65 percent of the hospital discharge records for persons 65 years of age and older. Many of the original hospital records may have contained more than five diagnoses; the omission of diagnoses beyond the fifth would result in a downward bias in the ratio of the all-listed to principal diagnoses.

While the hospital discharge rates by county of residence or by principal diagnosis serve as indicators of the level of hospitalization, they should not be taken to represent the incidence of hospitalization in the population. In these hospital discharge data, one cannot distinguish between persons having only one hospitalization and persons having more than one hospitalization. Personal identifiers are not part of the hospital discharge file. Hospitalizations could not be examined by person-specific data. Other research has shown that within a single year, as many as 11.8 percent of patients are readmitted.<sup>10</sup>

The average days stay and hospital charges for Medicaid patients were found to be much higher than that for any other payer class. Extremely ill patients who exhaust their Medicare benefits may resort to Medicaid benefits. Also, Medicaid would cover persons who are not eligible for Medicare. These Medicare ineligible persons may have been disabled for a lifetime, never employed, and therefore never have contributed to the Social Security System.

Additional studies could shed light on three seemingly anomalous findings: 1) for heart disease and cancer, the two leading principal diagnoses, females experienced, on the average, longer hospital stays than males but incurred lower hospital costs; 2) the average hospital charges went down with increasing age, although the average days stay was longer; and 3) for Medicaid patients, the average hospital stay is 10 times longer and nearly 50 percent more costly than that of Medicare patients. Further, it is hoped that these data on hospitalization of the elderly in North Carolina will prove useful to those involved in the prevention and treatment of health problems in this population.



TABLE 2

**PRINCIPAL DIAGNOSES IN INPATIENT HOSPITAL DISCHARGES  
NORTH CAROLINA RESIDENTS AGED 65 AND OLDER  
OCTOBER 1989 — SEPTEMBER 1990**

Principal Diagnosis	Number of Discharges			Discharge Rate			Average Days Stay			Average Charges per Stay		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Infectious and parasitic diseases	5,040	2,012	3,028	6.3	6.4	6.1	13.0	13.0	13.0	\$ 9,760.40	\$10,493.72	\$ 9,273.13
Cancer	16,914	8,761	8,153	21.0	28.0	16.5	10.9	10.6	11.2	10,056.18	10,246.56	9,851.61
Lung	2,135	1,470	665	2.6	4.7	1.3	12.1	11.6	13.2	11,176.73	10,947.00	11,684.55
Skin	64	31	33	0.1	0.1	0.1	5.3	5.2	5.4	4,266.21	4,428.80	4,113.47
Female breast	1,605	—	1,605	2.0	—	3.3	—	—	4.8	—	—	4,962.59
Cervix uteri	135	—	135	0.2	—	0.3	—	—	9.2	—	—	8,420.86
Ovary & other uterine adnexa	302	—	302	0.4	—	0.6	—	—	12.8	—	—	12,152.16
Prostate	2,293	2,293	—	2.8	7.3	—	—	7.6	—	—	7,157.41	—
Bladder	905	651	254	1.1	2.1	0.5	7.1	6.7	8.0	7,609.23	7,576.54	7,693.03
Brain	255	110	145	0.3	0.4	0.3	14.9	15.5	14.4	12,372.55	13,101.86	11,819.29
Thyroid	69	23	46	0.1	0.1	0.1	5.5	5.7	5.3	6,269.12	7,303.14	5,752.11
Hodgkin's disease	25	15	10	0.0	0.0	0.0	10.7	9.0	13.3	8,931.19	8,240.26	9,967.59
Leukemia	337	166	171	0.4	0.5	0.3	16.7	16.2	17.1	18,772.06	20,101.60	17,481.40
Thyroid gland disorders	223	33	190	0.3	0.1	0.4	6.7	6.2	6.8	7,116.85	7,922.89	6,976.86
Diabetes	3,007	1,104	1,903	3.7	3.5	3.9	11.5	11.7	11.3	7,365.04	7,871.10	7,071.45
Nutritional disorders	162	54	108	0.2	0.2	0.2	16.5	13.8	17.9	9,799.00	9,282.39	10,057.30
Mental disorders	7,165	2,806	4,359	8.9	9.0	8.8	63.6	83.0	51.1	8,816.24	8,820.25	8,813.66
Psychoses	5,490	1,998	3,492	6.8	6.4	7.1	62.7	75.9	55.1	9,594.28	9,898.19	9,420.40
Alcohol dependence syndrome	526	395	131	0.7	1.3	0.3	13.3	12.6	15.3	4,862.86	4,556.39	5,786.96
Drug dependence	27	8	19	0.0	0.0	0.0	22.2	21.1	22.7	8,529.64	9,098.17	8,290.25
Alzheimer's	122	43	79	0.2	0.1	0.2	16.7	22.7	13.4	7,171.68	9,205.09	6,084.88
Parkinson's	171	71	100	0.2	0.2	0.2	12.0	12.8	11.4	5,943.16	6,911.79	5,255.44
Glaucoma	117	44	73	0.1	0.1	0.1	2.9	2.8	3.0	2,862.39	2,647.93	2,991.65
Cataract	158	46	112	0.2	0.1	0.2	2.2	2.5	2.2	3,368.84	3,283.74	3,403.80
Heart disease	49,143	22,141	26,999	61.0	70.7	54.8	8.1	8.0	8.2	9,320.06	10,328.15	8,494.02
Hypertension	776	258	518	1.0	0.8	1.1	8.2	9.4	7.6	6,390.35	7,828.07	5,674.27
Cerebrovascular disease	14,080	5,691	8,389	17.5	18.2	17.0	12.4	12.1	12.6	8,499.76	9,159.34	8,052.32
Pneumonia and influenza	13,092	6,164	6,927	16.2	19.7	14.1	11.0	10.9	11.0	8,453.21	8,809.85	8,135.96
COPD	3,996	1,731	2,265	5.0	5.5	4.6	7.9	7.7	8.0	6,128.11	6,448.80	5,883.03
Pancreatitis	960	382	578	1.2	1.2	1.2	10.4	11.0	10.0	9,752.68	11,181.51	8,808.36
Nephritis, nephrotic syndrome, and nephrosis	1,089	510	579	1.4	1.6	1.2	12.9	12.9	13.0	10,354.19	11,010.93	9,775.71
Rheumatoid arthritis	387	79	308	0.5	0.3	0.6	9.8	9.5	9.8	10,516.83	11,169.77	10,349.35
Poisoning	360	126	234	0.4	0.4	0.5	7.5	8.9	6.7	5,557.27	6,704.51	4,939.52
All diagnoses	228,252	97,264	130,983	283.3	310.7	265.9	11.4	11.5	11.3	8,574.11	9,094.39	8,187.83



**TABLE 3**  
**RATIO OF MENTIONED TO PRINCIPAL DIAGNOSES**  
**INPATIENT HOSPITAL DISCHARGES**  
**OLDER NORTH CAROLINA RESIDENTS BY AGE GROUP**  
**OCTOBER 1989 — SEPTEMBER 1990**

<u>Diagnosis</u>	<u>Ages 65 and over</u>	<u>Ages 65-74</u>	<u>Ages 75-84</u>	<u>Ages 85 and over</u>
Infectious and parasitic disease	3.4	3.6	3.3	3.2
Cancer	1.8	1.8	1.7	1.9
Lung	2.4	2.5	2.2	2.5
Skin	1.8	1.7	1.8	2.1
Female breast	1.3	1.2	1.3	1.6
Cervix uteri	1.7	1.7	1.7	1.5
Ovary & other uterine adnexa	2.4	2.4	2.4	1.9
Prostate	1.7	1.6	1.9	2.3
Bladder	1.4	1.5	1.4	1.4
Brain	1.4	1.4	1.4	1.5
Thyroid	1.5	1.3	1.6	2.8
Hodgkin's disease	3.0	2.7	4.5	3.0
Leukemia	4.2	3.8	4.4	5.1
Thyroid gland disorders	22.6	18.0	28.2	33.6
Diabetes	11.1	10.5	12.0	12.1
Nutritional disorders	26.6	32.6	24.9	23.3
Mental disorders	3.7	3.0	3.9	6.4
Psychoses	2.8	2.0	3.1	5.4
Alcohol dependence syndrome	3.8	3.5	5.1	4.3
Drug dependence	9.7	7.5	17.6	*
Alzheimer's	17.2	12.6	15.1	36.9
Parkinson's	11.4	8.9	12.8	15.2
Glaucoma	12.7	9.0	13.6	65.3
Cataract	4.3	4.6	4.3	3.9
Heart disease	2.3	2.1	2.4	2.9
Hypertension	48.1	45.3	51.3	54.9
Cerebrovascular disease	1.7	1.7	1.7	1.7
Pneumonia and influenza	1.6	1.6	1.6	1.5
COPD	9.9	8.9	10.8	14.0
Pancreatitis	1.9	1.8	2.0	1.9
Nephritis, nephrotic syndrome, and nephrosis	7.4	7.6	7.4	7.1
Rheumatoid arthritis	5.6	4.6	8.1	12.7
Poisoning	1.6	1.5	1.6	1.9

\*No principal diagnosis in this category.

**TABLE 4**  
**INPATIENT HOSPITAL DISCHARGES BY PAYER CLASS AND AGE**  
**OLDER NORTH CAROLINA RESIDENTS**  
**OCTOBER 1989 — SEPTEMBER 1990**

<u>Payer Class</u>	<u>Number of Discharges</u>					<u>Average Days Stay</u>				<u>Average Hospital Charges</u>			
	<u>Ages 65+</u>	<u>Ages 65-74</u>	<u>Ages 75-84</u>	<u>Ages 85+</u>	<u>Ages 65+</u>	<u>Ages 65-74</u>	<u>Ages 78-84</u>	<u>Ages 85+</u>		<u>Ages 65-74</u>	<u>Ages 75-84</u>	<u>Ages 85+</u>	
Private or													
Employer	7,845	6,461	1,121	263	9.3	8.8	11.5	11.8	\$ 8,957	\$ 8,842	\$10,001	\$ 7,353	
Medicaid	1,843	1,013	653	177	133.9	133.5	144.9	95.2	12,421	11,319	13,659	14,236	
Medicare	217,151	102,816	82,965	31,370	10.1	9.2	10.6	11.6	8,504	8,711	8,509	7,811	
Self Pay/ Indigent/													
Charity	1,085	654	330	101	84.2	68.8	134.5	19.8	8,942	8,143	10,477	9,072	
Other	328	223	81	24	16.4	15.3	15.0	31.0	5,464	5,993	4,001	5,489	
All Carriers	228,252	111,167	85,150	31,935	11.4	10.7	12.1	12.1	8,548	8,733	8,569	7,844	



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**APPENDIX A.1**  
**INPATIENT HOSPITAL UTILIZATION DATA BY COUNTY**  
**NORTH CAROLINA RESIDENTS AGES 65 AND OLDER**  
**OCTOBER 1989 — SEPTEMBER 1990**

Counties	Number of Discharges	Discharge Rate	Average Days Stay	Average Charges
State	228,252	283.3	11.4	\$ 8,574.11
Alamance	3,742	230.7	10.1	9,684.77
Alexander	1,108	370.6	8.5	8,635.58
Alleghany	686	393.1	6.6	4,307.95
Anson	877	235.6	9.5	9,288.50
Ashe	1,224	322.2	7.4	5,632.54
Avery	1,015	477.4	6.9	5,563.61
Beaufort	1,962	314.1	9.2	6,936.01
Bertie	926	307.2	10.7	7,448.50
Bladen	1,196	294.7	8.4	7,638.36
Brunswick	2,101	286.9	8.4	7,251.63
Buncombe	6,774	241.6	10.5	8,779.58
Burke	3,040	311.5	13.6	8,112.82
Cabarrus	4,605	349.0	11.9	8,377.22
Caldwell	2,705	317.4	9.1	8,840.42
Camden	138	166.5	9.8	7,976.84
Carteret	2,211	296.6	9.2	8,045.46
Caswell	287	98.1	12.0	10,100.73
Catawba	3,291	231.4	10.9	10,773.46
Chatham	1,373	249.4	10.0	8,179.75
Cherokee	1,177	309.2	6.5	6,073.99
Chowan	544	229.5	12.8	7,567.63
Clay	275	191.4	5.5	5,435.22
Cleveland	3,288	284.2	13.7	8,425.43
Columbus	2,322	345.4	10.7	8,759.05
Craven	2,914	328.7	11.1	8,177.49
Cumberland	3,989	237.0	11.8	11,677.26
Currituck	230	133.8	14.6	7,985.43
Dare	357	120.0	16.3	8,888.96
Davidson	4,159	273.3	11.1	7,512.25
Davie	1,477	401.6	8.7	6,484.02
Duplin	1,707	301.7	11.6	8,603.66
Durham	4,709	237.9	14.2	10,621.41
Edgecombe	2,363	336.6	13.6	10,663.86
Forsyth	9,156	278.5	11.6	8,396.73
Franklin	1,517	303.3	9.7	9,047.11
Gaston	5,682	267.7	12.1	8,743.94
Gates	183	129.3	9.0	6,848.00
Graham	291	255.7	7.5	6,160.81
Granville	1,181	241.4	9.8	8,703.02
Greene	514	269.1	11.7	8,701.93
Guilford	11,650	279.9	10.4	8,774.89
Halifax	2,703	334.4	20.7	9,068.55
Harnett	2,549	324.8	10.4	8,138.63
Haywood	2,912	344.7	15.5	6,207.27
Henderson	4,420	295.3	10.1	6,557.51
Hertford	1,012	300.8	10.1	7,142.45
Hoke	438	203.7	12.3	9,902.68
Hyde	303	338.2	6.6	5,918.39
Iredell	4,260	344.9	9.7	9,196.94
Jackson	1,238	342.9	7.0	5,752.15



APPENDIX A.1 (con't)  
 INPATIENT HOSPITAL UTILIZATION DATA BY COUNTY  
 NORTH CAROLINA RESIDENTS AGES 65 AND OLDER  
 OCTOBER 1989 — SEPTEMBER 1990

Counties	Number of Discharges	Discharge Rate	Average Days Stay	Average Charges
Johnston	3,298	319.0	10.6	\$ 9,024.37
Jones	497	362.8	20.0	8,198.07
Lee	1,561	291.6	8.6	9,741.30
Lenoir	3,042	385.3	13.0	9,558.55
Lincoln	1,497	258.1	16.6	9,307.78
McDowell	1,652	323.4	8.1	7,174.26
Macon	1,774	340.4	6.8	5,589.29
Madison	587	211.9	15.1	8,736.02
Martin	858	235.3	11.5	8,572.03
Mecklenburg	11,171	229.5	11.3	10,304.09
Mitchell	906	359.7	7.7	5,689.29
Montgomery	1,020	312.8	9.1	7,302.03
Moore	3,063	256.8	10.6	8,035.98
Nash	2,911	308.1	11.3	11,278.53
New Hanover	4,272	287.1	11.2	8,907.91
Northampton	974	283.0	18.8	7,944.53
Onslow	2,018	296.5	11.4	7,543.41
Orange	1,725	210.8	9.6	9,696.79
Pamlico	502	268.7	9.8	8,817.97
Pasquotank	1,053	241.6	12.9	8,738.55
Pender	1,120	274.4	9.0	7,798.48
Perquimans	387	199.4	8.4	6,930.24
Person	1,071	248.5	9.5	8,808.99
Pitt	2,986	281.9	12.7	9,726.61
Polk	862	242.1	7.2	5,463.64
Randolph	3,142	243.9	9.6	8,216.86
Richmond	2,245	352.7	9.0	8,358.64
Robeson	3,345	292.9	10.9	10,229.22
Rockingham	4,055	332.5	11.0	8,054.06
Rowan	3,950	231.5	10.1	6,984.90
Rutherford	2,206	248.0	9.5	7,595.38
Sampson	2,017	294.2	10.4	8,546.82
Scotland	1,142	304.5	9.2	8,966.79
Stanly	2,237	292.3	9.4	6,996.01
Stokes	1,218	290.5	10.5	7,331.37
Surry	3,368	367.7	8.3	6,801.62
Swain	718	408.2	8.5	5,474.85
Transylvania	1,153	247.4	8.3	7,516.98
Tyrrell	161	237.1	7.7	7,209.04
Union	1,962	238.0	11.3	9,623.93
Vance	1,324	255.9	10.8	7,378.12
Wake	10,435	311.0	19.6	9,327.56
Warren	592	196.0	13.1	9,057.19
Washington	605	318.6	7.7	7,208.29
Watauga	1,207	309.4	8.6	6,603.21
Wayne	3,216	299.6	14.8	8,413.39
Wilkes	2,609	335.8	9.6	7,745.43
Wilson	2,507	300.1	12.7	9,581.09
Yadkin	1,553	345.2	8.0	6,600.96
Yancey	820	313.9	8.7	7,570.37



**APPENDIX A.2**  
**INPATIENT HOSPITAL UTILIZATION DATA BY COUNTY**  
**NORTH CAROLINA RESIDENTS AGES 65 TO 74**  
**OCTOBER 1989 — SEPTEMBER 1990**

Counties	Number of Discharges	Discharge Rate	Average Days Stay	Average Charges
State	111,167	230.2	10.7	\$ 8,770.45
Alamance	1,981	203.1	9.5	10,375.19
Alexander	567	318.2	7.2	8,228.75
Alleghany	280	286.0	6.5	4,849.00
Anson	403	188.1	9.0	9,869.22
Ashe	486	232.8	6.9	6,303.80
Avery	444	354.1	7.6	6,297.62
Beaufort	986	270.4	8.9	7,296.74
Bertie	443	247.2	9.4	7,782.50
Bladen	629	256.0	7.4	7,479.73
Brunswick	1,056	210.2	7.8	7,657.07
Buncombe	2,929	184.1	9.9	8,507.42
Burke	1,402	238.4	10.9	8,013.54
Cabarrus	2,165	278.2	9.7	8,309.87
Caldwell	1,292	251.2	8.7	8,868.85
Camden	73	142.3	9.3	7,760.54
Carteret	1,198	251.5	8.5	8,346.37
Caswell	128	72.6	10.8	9,406.14
Catawba	1,665	191.7	9.4	11,158.35
Chatham	643	195.4	9.0	8,296.28
Cherokee	504	225.7	6.0	6,064.03
Chowan	226	163.9	8.0	7,936.04
Clay	107	122.7	5.0	5,413.82
Cleveland	1,571	229.3	14.6	8,620.85
Columbus	1,151	281.3	9.4	8,401.47
Craven	1,532	268.9	9.2	8,216.70
Cumberland	2,128	191.8	10.8	11,909.82
Currituck	103	95.9	20.4	7,819.25
Dare	174	87.7	19.4	8,446.66
Davidson	2,047	221.0	10.0	7,432.10
Davie	700	315.3	7.8	6,456.88
Duplin	826	246.2	12.4	8,754.24
Durham	2,260	200.8	12.4	10,559.09
Edgecombe	1,197	282.8	14.9	10,392.47
Forsyth	4,284	224.4	10.4	8,588.11
Franklin	668	232.2	8.9	9,314.38
Gaston	2,908	229.2	11.2	9,128.94
Gates	86	101.7	8.7	6,342.53
Graham	124	182.4	7.0	6,494.28
Granville	580	202.1	9.0	8,555.19
Greene	255	218.3	8.9	8,367.77
Guilford	5,786	237.2	9.3	8,954.33
Halifax	1,300	271.9	12.0	8,470.22
Harnett	1,265	270.9	10.2	8,142.19
Haywood	1,268	255.6	24.7	7,145.70
Henderson	1,924	222.1	9.5	6,995.27
Hertford	451	233.4	8.9	6,921.45
Hoke	195	146.4	10.7	9,814.26
Hyde	160	325.2	6.8	6,519.60
Iredell	2,066	283.8	8.7	9,472.77
Jackson	550	267.9	6.5	5,729.13



APPENDIX A.2 (con't)  
**INPATIENT HOSPITAL UTILIZATION DATA BY COUNTY**  
**NORTH CAROLINA RESIDENTS AGES 65 TO 74**  
**OCTOBER 1989 — SEPTEMBER 1990**

Counties	Number of Discharges	Discharge Rate	Average Days Stay	Average Charges
Johnston	1,746	275.0	10.1	\$ 9,090.47
Jones	261	304.2	29.2	8,749.06
Lee	825	245.2	8.2	9,697.19
Lenoir	1,529	315.9	10.2	9,145.36
Lincoln	741	206.8	8.8	9,980.01
McDowell	781	261.6	8.0	7,401.93
Macon	790	264.6	6.5	5,827.24
Madison	264	173.2	22.2	9,655.31
Martin	403	182.5	10.9	8,569.91
Mecklenburg	5,567	189.0	10.8	10,836.98
Mitchell	353	252.3	7.5	5,797.62
Montgomery	500	252.3	9.1	8,003.21
Moore	1,553	206.8	8.5	8,131.21
Nash	1,437	249.0	9.2	10,825.79
New Hanover	2,281	247.7	10.4	8,901.54
Northampton	552	261.5	10.4	8,197.60
Onslow	1,061	238.8	11.3	7,595.60
Orange	825	171.7	8.8	9,648.54
Pamlico	230	204.8	8.2	8,352.84
Pasquotank	427	166.7	10.3	8,101.29
Pender	528	201.8	7.8	7,827.15
Perquimans	185	160.5	8.1	6,396.90
Person	485	191.2	8.7	8,529.57
Pitt	1,524	236.3	10.5	9,901.29
Polk	360	182.7	7.1	5,673.10
Randolph	1,642	210.6	9.4	8,154.18
Richmond	1,120	285.5	8.2	8,472.48
Robeson	1,743	248.2	9.5	9,658.81
Rockingham	1,966	272.5	10.8	8,341.35
Rowan	1,858	187.0	9.5	7,701.19
Rutherford	939	184.7	8.1	7,332.36
Sampson	963	236.4	10.0	8,757.91
Scotland	565	244.8	8.5	8,739.24
Stanly	1,052	230.8	8.6	7,284.60
Stokes	539	221.7	10.1	7,566.64
Surry	1,634	309.8	8.1	7,215.23
Swain	320	327.9	8.7	5,547.57
Transylvania	588	207.0	7.8	7,584.10
Tyrrell	81	208.8	7.5	6,759.08
Union	971	192.7	8.9	9,957.75
Vance	664	216.3	11.6	8,016.83
Wake	5,105	250.6	21.1	9,537.48
Warren	302	170.3	9.7	9,163.98
Washington	289	254.6	7.6	7,626.17
Watauga	547	240.0	8.7	7,128.39
Wayne	1,726	257.5	14.1	8,138.15
Wilkes	1,249	271.9	9.4	8,031.13
Wilson	1,329	260.1	12.1	9,299.36
Yadkin	730	281.6	7.8	6,883.92
Yancey	325	217.4	8.7	8,926.14



**APPENDIX A.3**  
**INPATIENT HOSPITAL UTILIZATION DATA BY COUNTY**  
**NORTH CAROLINA RESIDENTS AGES 75 TO 84**  
**OCTOBER 1989 — SEPTEMBER 1990**

Counties	Number of Discharges	Discharge Rate	Average Days Stay	Average Charges
State	85,150	338.6	12.1	\$8,587.94
Alamance	1,298	254.5	10.6	9,263.53
Alexander	372	393.7	9.3	9,754.43
Alleghany	258	444.1	6.6	4,271.74
Anson	328	276.3	8.9	8,683.92
Ashe	483	376.5	7.4	5,181.10
Avery	406	597.9	6.4	5,012.81
Beaufort	723	354.9	9.8	6,928.76
Bertie	348	351.2	10.0	7,117.29
Bladen	423	333.1	9.5	7,958.23
Brunswick	724	388.8	9.2	7,179.08
Buncombe	2,767	303.9	10.9	9,269.22
Burke	1,209	387.1	14.1	8,420.75
Cabarrus	1,814	418.5	14.0	8,779.84
Caldwell	1,024	381.2	9.2	9,220.39
Camden	40	156.3	10.2	7,950.95
Carteret	736	349.8	9.8	8,075.39
Caswell	129	143.5	10.0	10,430.32
Catawba	1,209	274.6	12.5	10,761.10
Chatham	546	322.9	10.7	8,294.18
Cherokee	457	381.8	6.6	6,197.92
Chowan	220	298.1	19.1	7,163.87
Clay	114	253.9	6.0	5,835.24
Cleveland	1,223	329.0	12.8	8,437.78
Columbus	884	420.2	11.4	9,052.73
Craven	1,022	408.5	13.4	8,253.92
Cumberland	1,377	296.4	12.6	11,413.83
Currituck	92	175.6	9.6	8,400.33
Dare	132	165.8	12.5	9,211.94
Davidson	1,596	335.6	11.5	7,521.53
Davie	564	499.6	9.7	6,917.84
Duplin	723	391.0	10.3	8,408.10
Durham	1,785	275.0	15.8	10,958.97
Edgecombe	854	391.7	10.9	10,293.91
Forsyth	3,393	329.6	12.7	8,558.74
Franklin	571	357.3	9.9	8,755.58
Gaston	2,084	306.1	12.7	8,401.22
Gates	75	162.0	9.2	7,376.75
Graham	124	349.3	7.3	5,559.63
Granville	434	278.0	10.8	9,272.13
Greene	199	331.7	12.6	8,737.79
Guilford	4,219	324.5	11.5	8,853.52
Halifax	1,050	411.0	33.3	9,728.49
Harnett	980	385.8	10.7	8,306.45
Haywood	1,088	413.5	8.1	5,527.87
Henderson	1,697	350.7	10.8	6,318.37
Hertford	382	348.2	11.3	7,672.68
Hoke	157	248.4	12.6	9,945.64
Hyde	102	316.8	6.4	5,440.42
Iredell	1,622	407.1	10.5	9,048.69
Jackson	490	414.6	7.4	6,012.35



**APPENDIX A.3 (con't)**  
**INPATIENT HOSPITAL UTILIZATION DATA BY COUNTY**  
**NORTH CAROLINA RESIDENTS AGES 75 TO 84**  
**OCTOBER 1989 — SEPTEMBER 1990**

Counties	Number of Discharges	Discharge Rate	Average Days Stay	Average Charges
Johnston	1,179	367.2	10.6	\$ 9,100.04
Jones	179	424.2	10.0	7,767.17
Lee	588	383.6	9.1	10,267.34
Lenoir	1,154	468.7	15.3	9,870.72
Lincoln	583	332.2	28.2	8,553.43
McDowell	648	392.5	8.1	7,006.21
Macon	678	385.4	6.9	5,481.59
Madison	224	232.8	9.7	8,538.18
Martin	348	301.3	12.9	9,197.73
Mecklenburg	4,058	276.1	11.8	10,238.77
Mitchell	350	411.8	7.5	5,570.05
Montgomery	374	368.5	8.8	6,626.25
Moore	1,117	317.4	12.5	7,911.32
Nash	1,121	389.8	12.7	11,674.86
New Hanover	1,482	334.7	12.3	9,303.26
Northampton	298	290.7	37.4	7,844.84
Onslow	672	359.4	12.1	7,772.73
Orange	660	259.1	10.5	10,180.11
Pamlico	190	346.7	11.5	9,775.98
Pasquotank	442	324.0	14.8	8,858.55
Pender	417	363.2	8.7	7,588.33
Perquimans	154	247.6	8.7	7,911.85
Person	450	321.7	10.6	9,901.59
Pitt	1,095	335.8	15.0	9,562.34
Polk	331	278.4	6.9	5,397.83
Randolph	1,176	286.3	9.8	8,499.71
Richmond	832	432.0	9.4	8,299.17
Robeson	1,201	343.1	12.2	11,209.79
Rockingham	1,547	393.2	10.6	7,806.83
Rowan	1,464	266.5	10.1	6,280.88
Rutherford	886	299.4	10.3	7,890.06
Sampson	766	344.7	10.7	8,505.04
Scotland	471	394.8	9.7	9,329.58
Stanly	904	360.4	10.2	7,017.06
Stokes	477	350.2	10.7	7,200.55
Surry	1,255	416.9	8.4	6,623.84
Swain	267	446.5	8.3	5,541.69
Transylvania	432	299.2	9.3	8,131.38
Tyrrell	56	239.3	8.6	9,084.99
Union	733	292.1	14.4	9,390.86
Vance	499	307.5	8.4	6,479.04
Wake	3,748	371.0	18.8	9,051.17
Warren	222	232.5	17.9	9,595.53
Washington	219	353.2	7.9	7,382.78
Watauga	431	362.2	8.1	6,047.96
Wayne	1,141	357.9	14.1	8,981.87
Wilkes	1,036	408.5	9.8	7,532.79
Wilson	862	334.8	12.6	9,977.64
Yadkin	596	400.3	8.0	6,438.43
Yancey	330	379.7	8.4	6,921.00



**APPENDIX A.4**  
**INPATIENT HOSPITAL UTILIZATION DATA BY COUNTY**  
**NORTH CAROLINA RESIDENTS AGES 85 AND OLDER**  
**OCTOBER 1989 — SEPTEMBER 1990**

Counties	Number of Discharges	Discharge Rate	Average Days Stay	Average Charges
State	31,935	446.9	12.1	\$ 7,853.74
Alamance	463	338.7	11.1	7,911.64
Alexander	169	642.6	10.8	7,537.76
Alleghany	148	800.0	6.6	3,347.45
Anson	146	372.4	12.3	9,043.79
Ashe	255	595.8	8.5	5,208.26
Avery	165	854.9	6.4	4,943.77
Beaufort	253	449.4	8.4	5,550.92
Bertie	135	584.4	17.1	7,206.26
Bladen	144	435.0	9.5	7,391.66
Brunswick	321	736.2	8.6	6,081.44
Buncombe	1,078	356.6	11.0	8,262.28
Burke	429	566.7	20.9	7,569.49
Cabarrus	626	581.2	13.7	7,443.46
Caldwell	389	561.3	9.9	7,745.74
Camden	25	416.7	11.0	8,649.85
Carteret	277	471.9	10.4	6,664.52
Caswell	30	113.6	25.5	11,647.09
Catawba	417	367.1	12.0	9,272.50
Chatham	184	351.1	11.4	7,432.98
Cherokee	216	574.5	7.2	5,835.00
Chowan	98	387.4	9.6	7,624.41
Clay	54	465.5	5.3	4,633.15
Cleveland	494	494.0	13.0	7,773.36
Columbus	287	544.6	13.5	9,288.51
Craven	360	542.2	12.9	7,793.66
Cumberland	484	445.7	14.0	11,404.20
Currituck	35	289.3	10.7	7,383.91
Dare	51	260.2	15.6	9,562.05
Davidson	516	430.0	13.9	7,801.48
Davie	213	647.4	9.1	5,424.48
Duplin	158	348.0	13.1	8,711.27
Durham	664	323.9	16.1	9,926.11
Edgecombe	312	513.2	16.3	12,717.65
Forsyth	1,479	423.2	12.6	7,470.73
Franklin	278	528.5	11.3	9,003.67
Gaston	690	399.8	14.2	8,156.49
Gates	22	207.5	9.2	7,021.35
Graham	43	417.5	9.7	6,932.81
Granville	167	362.3	10.5	7,737.43
Greene	60	422.5	21.1	10,003.12
Guilford	1,645	389.3	11.5	7,942.06
Halifax	353	473.2	15.2	9,309.05
Harnett	304	475.7	9.8	7,582.83
Haywood	556	649.5	8.9	5,396.59
Henderson	799	545.8	10.4	6,011.30
Hertford	179	534.3	10.5	6,567.72
Hoke	86	462.4	15.6	10,024.72
Hyde	41	500.0	6.3	4,761.28
Iredell	572	526.2	11.1	8,621.07
Jackson	198	528.0	7.2	5,172.15



APPENDIX A.4 (con't)  
 INPATIENT HOSPITAL UTILIZATION DATA BY COUNTY  
 NORTH CAROLINA RESIDENTS AGES 85 AND OLDER  
 OCTOBER 1989 — SEPTEMBER 1990

Counties	Number of Discharges	Discharge Rate	Average Days Stay	Average Charges
Johnston	373	478.2	12.9	\$ 8,475.77
Jones	57	633.3	9.4	7,028.31
Lee	148	324.6	8.7	7,897.22
Lenoir	359	604.4	17.5	10,314.92
Lincoln	173	373.7	11.6	8,970.58
McDowell	223	472.5	8.5	6,865.22
Macon	306	655.2	7.2	5,213.60
Madison	99	348.6	8.5	6,732.20
Martin	107	376.8	8.8	6,545.03
Mecklenburg	1,546	342.3	11.9	8,556.67
Mitchell	203	751.9	8.4	5,706.49
Montgomery	146	553.0	9.8	6,631.78
Moore	393	437.2	13.4	8,013.95
Nash	353	441.3	15.1	11,862.95
New Hanover	509	408.8	11.5	7,785.41
Northampton	124	405.2	11.6	7,057.56
Onslow	285	579.3	10.2	6,808.41
Orange	240	288.5	10.0	8,533.50
Pamlico	82	416.2	10.6	7,902.83
Pasquotank	184	424.9	14.5	9,929.19
Pender	175	550.3	13.1	8,212.72
Perquimans	48	289.2	8.3	5,836.50
Person	136	362.7	8.6	6,190.25
Pitt	367	415.6	14.9	9,491.40
Polk	171	426.4	7.9	5,150.04
Randolph	324	332.0	9.7	7,507.84
Richmond	293	566.7	10.8	8,092.34
Robeson	401	447.0	13.2	9,771.73
Rockingham	542	519.2	13.0	7,717.59
Rowan	628	384.6	11.6	6,506.90
Rutherford	381	447.2	11.0	7,558.37
Sampson	288	514.3	11.2	7,952.10
Scotland	106	424.0	11.3	8,567.70
Stanly	281	477.9	10.1	5,847.90
Stokes	202	505.0	10.8	7,012.48
Surry	479	546.8	8.6	5,856.51
Swain	131	708.1	8.3	5,160.99
Transylvania	133	353.7	7.1	5,224.62
Tyrrell	24	421.1	6.3	4,350.47
Union	258	372.3	11.8	9,029.73
Vance	161	335.4	14.5	7,530.50
Wake	1,582	513.3	17.0	9,304.97
Warren	68	232.1	12.5	6,825.43
Washington	97	673.6	7.6	5,569.30
Watauga	229	530.1	9.0	6,393.80
Wayne	349	412.5	20.4	7,916.09
Wilkes	324	506.3	9.6	7,323.98
Wilson	316	472.3	15.1	9,684.24
Yadkin	227	543.1	8.7	6,117.75
Yancey	165	665.3	9.0	6,198.67



## APPENDIX B.1

17



**APPENDIX B.2**  
**PRINCIPAL DIAGNOSES IN INPATIENT HOSPITAL DISCHARGES**  
**NORTH CAROLINA RESIDENTS AGED 75 TO 84**  
**OCTOBER 1989 — SEPTEMBER 1990**

Principal Diagnosis	Number of Discharges		Discharge Rate		Average Days Stay		Average Charges per Stay					
	Total	Male	Female	Total	Male	Female	Total	Male	Female			
Infectious and parasitic diseases	2,068	827	1,241	8.2	9.4	7.6	14.0	13.8	14.2	\$ 9,949.84	\$10,499.38	\$ 9,583.63
Cancer	6,039	3,104	2,935	24.0	35.1	18.0	11.2	10.6	11.7	9,861.78	10,035.67	9,677.87
Lung	649	465	184	2.6	5.3	1.1	13.1	12.3	15.0	10,855.82	10,888.45	10,773.34
Skin	19	13	6	0.1	0.1	0.0	6.1	6.3	5.7	4,333.96	4,396.68	4,198.06
Female breast	532	—	532	2.1	—	3.3	—	—	5.2	—	—	5,115.70
Cervix uteri	43	—	43	0.2	—	0.3	—	—	10.7	—	—	7,402.07
Ovary & other uterine adnexa	101	—	101	0.4	—	0.6	—	—	14.6	—	—	14,736.77
Prostate	878	878	—	3.5	9.9	—	—	7.3	—	—	6,271.63	—
Bladder	389	278	111	1.5	3.1	0.7	7.2	6.6	8.8	7,746.11	7,747.40	8,469.19
Brain	85	31	54	0.3	0.4	0.3	14.8	15.5	14.4	10,426.62	10,871.35	10,171.31
Thyroid	29	10	19	0.1	0.1	0.1	7.4	6.9	7.7	7,658.40	8,716.72	7,101.38
Hodgkin's disease	4	1	3	0.0	0.0	0.0	20.5	18.0	21.3	13,990.32	12,906.58	14,351.56
Leukemia	135	57	78	0.5	0.6	0.5	12.7	12.6	12.8	11,898.27	13,899.35	10,435.95
Thyroid gland disorders	68	9	59	0.3	0.1	0.4	7.2	10.8	6.7	7,238.15	17,202.48	5,718.17
Diabetes	987	326	661	3.9	3.7	4.1	12.7	14.5	11.8	7,806.60	8,694.57	7,368.66
Nutritional disorders	72	22	50	0.3	0.2	0.3	13.7	13.7	13.7	9,418.54	10,377.24	8,996.72
Mental disorders	2,553	949	1,604	10.2	10.7	9.8	70.3	102.4	51.3	9,774.48	10,548.65	9,268.69
Psychoses	2,090	760	1,330	8.3	8.6	8.2	68.1	91.6	54.6	10,214.69	10,834.95	9,860.26
Alcohol dependence syndrome	70	53	17	0.3	0.6	0.1	15.1	15.3	14.6	5,229.82	5,038.14	5,827.41
Drug dependence	5	3	2	0.0	0.0	0.0	23.8	21.0	28.0	11,324.60	11,304.33	11,355.00
Alzheimer's	69	23	46	0.3	0.3	0.3	18.4	27.9	13.7	7,909.96	10,930.41	6,399.73
Parkinson's	78	40	38	0.3	0.5	0.2	11.3	12.0	10.6	5,384.24	5,631.01	5,124.48
Glaucoma	44	17	27	0.2	0.2	0.2	2.9	2.8	2.9	2,785.90	2,589.71	2,909.43
Cataract	71	25	46	0.3	0.3	0.3	205	2.5	2.5	3,265.56	3,223.30	3,288.52
Heart disease	18,643	7,497	11,144	74.1	84.9	68.3	8.3	8.3	8.4	8,603.48	9,431.54	8,047.22
Hypertension	259	86	173	1.0	1.0	1.1	8.9	10.2	8.3	7,214.01	9,547.05	6,054.23
Cerebrovascular disease	5,978	2,265	3,713	23.8	25.6	22.8	12.6	12.4	12.7	8,272.74	9,114.42	7,759.30
Pneumonia and influenza	5,172	2,528	2,644	20.6	28.6	16.2	11.4	11.3	11.4	8,644.90	8,873.70	8,426.15
COPD	1,325	578	747	5.3	6.5	4.6	7.9	7.8	8.1	5,850.31	6,068.00	5,681.86
Pancreatitis	335	123	212	1.3	1.4	1.3	10.1	10.9	9.6	8,980.93	10,168.59	8,291.86
Nephritis, nephrotic syndrome, and nephrosis	436	201	235	1.7	2.3	1.4	13.4	13.3	13.5	10,511.12	11,262.85	9,868.15
Rheumatoid arthritis	90	20	70	0.4	0.2	0.4	11.1	11.6	11.0	10,828.86	11,198.51	10,723.25
Poisoning	139	44	95	0.6	0.5	0.6	8.1	9.8	7.3	5,528.53	5,954.59	5,331.20
All diagnoses	85,150	34,156	50,991	338.6	386.6	312.6	12.1	12.7	11.7	8,587.94	9,107.07	8,240.23



**APPENDIX B.3**  
**PRINCIPAL DIAGNOSES IN INPATIENT HOSPITAL DISCHARGES**  
**NORTH CAROLINA RESIDENTS AGED 85 AND OLDER**  
**OCTOBER 1989 — SEPTEMBER 1990**

Principal Diagnosis	Number of Discharges		Discharge Rate		Average Days Stay		Average Charges per Stay					
	Total	Male	Female	Total	Male	Female	Total	Male	Female			
Infectious and parasitic diseases	1,043	333	710	14.6	17.6	13.5	14.1	13.8	14.3	\$ 9,191.80	\$ 9,796.76	\$ 8,908.07
Cancer	1,441	631	810	20.2	33.4	15.4	11.8	11.3	12.2	9,419.44	9,301.39	9,511.41
Lung	91	61	30	1.3	3.2	0.6	11.6	12.1	10.7	8,222.43	8,686.67	7,278.48
Skin	7	0	7	0.1	0.0	0.1	6.3	0.0	6.3	3,975.68	0.00	3,975.68
Female breast	110	—	110	1.5	—	2.1	—	—	6.4	—	—	5,404.27
Cervix uteri	16	—	16	0.2	—	0.3	—	—	9.6	—	—	7,076.22
Ovary & other uterine adnexa	17	—	17	0.2	—	0.3	—	—	14.2	—	—	11,441.36
Prostate	205	205	—	2.9	10.8	—	—	7.9	—	—	6,121.57	—
Bladder	98	58	40	1.4	3.1	0.8	8.0	8.5	7.2	7,261.82	7,740.82	6,567.26
Brain	13	2	11	0.2	0.1	0.2	21.5	24.5	21.0	17,000.22	10,990.70	18,092.86
Thyroid	4	0	4	0.1	0.0	0.1	6.8	0.0	6.8	6,069.03	0.00	6,069.03
Hodgkin's disease	1	0	1	0.0	0.0	0.0	6.0	0.0	6.0	5,598.57	0.00	5,598.57
Leukemia	37	12	25	0.5	0.6	0.5	11.1	13.2	10.2	8,009.71	10,027.82	7,041.02
Thyroid gland disorders	21	4	17	0.3	0.2	0.3	10.1	6.3	11.0	11,630.50	3,278.43	13,595.70
Diabetes	237	68	169	3.3	3.6	3.2	13.6	11.5	14.4	7,817.77	7,244.52	8,048.43
Nutritional disorders	45	17	28	0.6	0.9	0.5	21.0	14.9	24.6	9,523.24	7,725.71	10,614.59
Mental disorders	736	248	488	10.3	13.1	9.3	42.7	48.6	39.7	8,619.97	10,116.00	7,859.69
Psychoses	610	211	399	8.5	11.2	7.6	48.8	54.9	45.6	9,307.31	10,926.06	8,451.28
Alcohol dependence syndrome	6	4	2	0.1	0.2	0.0	16.8	17.8	15.0	3,958.22	4,529.07	2,816.50
Drug dependence	0	0	0	0.0	0.0	0.0	—	—	—	—	—	—
Alzheimer's	16	4	12	0.2	0.2	0.2	13.7	15.5	13.1	6,483.82	7,480.70	6,151.52
Parkinson's	20	8	12	0.3	0.4	0.2	11.6	8.6	13.6	5,414.73	5,859.93	5,117.93
Glaucoma	4	1	3	0.1	0.1	0.1	2.8	1.0	3.3	2,294.32	701.75	2,825.18
Cataract	31	2	29	0.4	0.1	0.6	1.7	2.0	1.7	3,640.22	4,822.88	3,558.65
Heart disease	6,228	1,757	4,470	87.2	92.9	85.1	8.9	8.8	9.0	6,918.86	7,378.15	6,739.45
Hypertension	64	13	51	0.9	0.7	1.0	8.1	14.4	6.5	5,011.29	7,510.52	4,374.23
Cerebrovascular disease	2,491	683	1,808	34.9	36.1	34.4	14.3	13.7	14.5	8,022.83	8,295.30	7,919.90
Pneumonia and influenza	3,193	1,184	2,009	44.7	62.6	38.2	11.5	10.9	11.9	7,816.72	7,608.46	7,939.46
COPD	273	93	180	3.8	4.9	3.4	8.3	8.0	8.5	5,791.67	5,802.27	5,786.19
Pancreatitis	121	25	96	1.7	1.3	1.8	9.6	11.7	9.0	8,862.96	13,467.98	7,663.74
Nephritis, nephrotic syndrome, and nephrosis	189	79	110	2.6	4.2	2.1	15.3	14.3	16.0	9,638.65	9,655.87	9,626.27
Rheumatoid arthritis	11	0	11	0.2	0.0	0.2	11.8	0.0	11.8	9,268.06	0.00	9,268.06
Poisoning	42	15	27	0.6	0.8	0.5	8.2	10.9	6.7	5,346.87	7,244.67	4,292.54
All diagnoses	31,935	9,535	22,399	446.9	504.0	426.3	12.1	12.0	12.2	7,853.74	8,110.79	7,744.58



**APPENDIX C**  
**INTERNATIONAL CLASSIFICATION OF DISEASES CODES**  
**(NINTH REVISION) FOR PRINCIPAL DIAGNOSES**  
**AND COMORBID CONDITIONS**

CONDITION	ICD CODES
Infectious and parasitic conditions .....	001-139
Cancer .....	140-208
Trachea, bronchus, and lung .....	162
Skin .....	172
Female breast .....	174
Cervix uteri .....	180
Ovary & other uterine adnexa .....	183
Prostate .....	185
Bladder .....	188
Brain .....	191
Thyroid .....	193
Hodgkin's disease .....	201
Leukemia .....	204-208
Thyroid gland disorders .....	240-246
Diabetes .....	250
Nutritional disorders .....	260-269
Mental disorders .....	290-319
Psychoses .....	290-299
Alcohol dependence syndrome .....	303
Drug dependence .....	304
Alzheimer's .....	331.0
Parkinson's .....	332
Glaucoma .....	365
Cataract .....	366
Heart disease .....	390-398,402,404-429
Hypertension .....	401,403
Cerebrovascular disease .....	430-438
Pneumonia and influenza .....	480-487
Chronic obstructive pulmonary disease .....	490-496
Pancreatitis .....	577
Nephritis, nephrotic syndrome, and nephrosis .....	580-589
Rheumatoid arthritis .....	714.0
Poisoning .....	960-979



APPENDIX D

INPATIENT HOSPITAL DISCHARGE RATES  
NORTH CAROLINA RESIDENTS AGED 65 AND OLDER

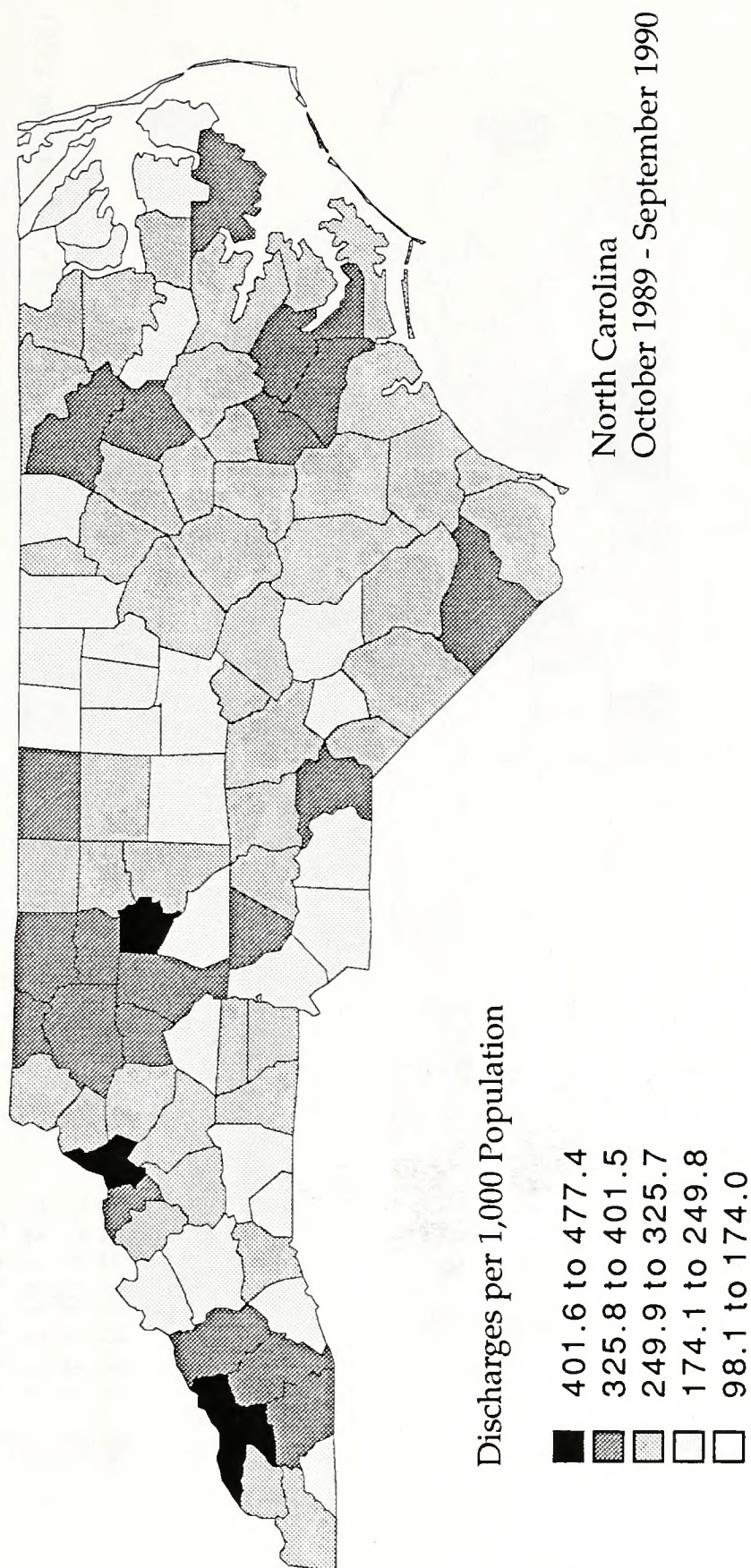


FIGURE 1



# AVERAGE DAYS STAY NORTH CAROLINA RESIDENTS AGED 65 AND OLDER

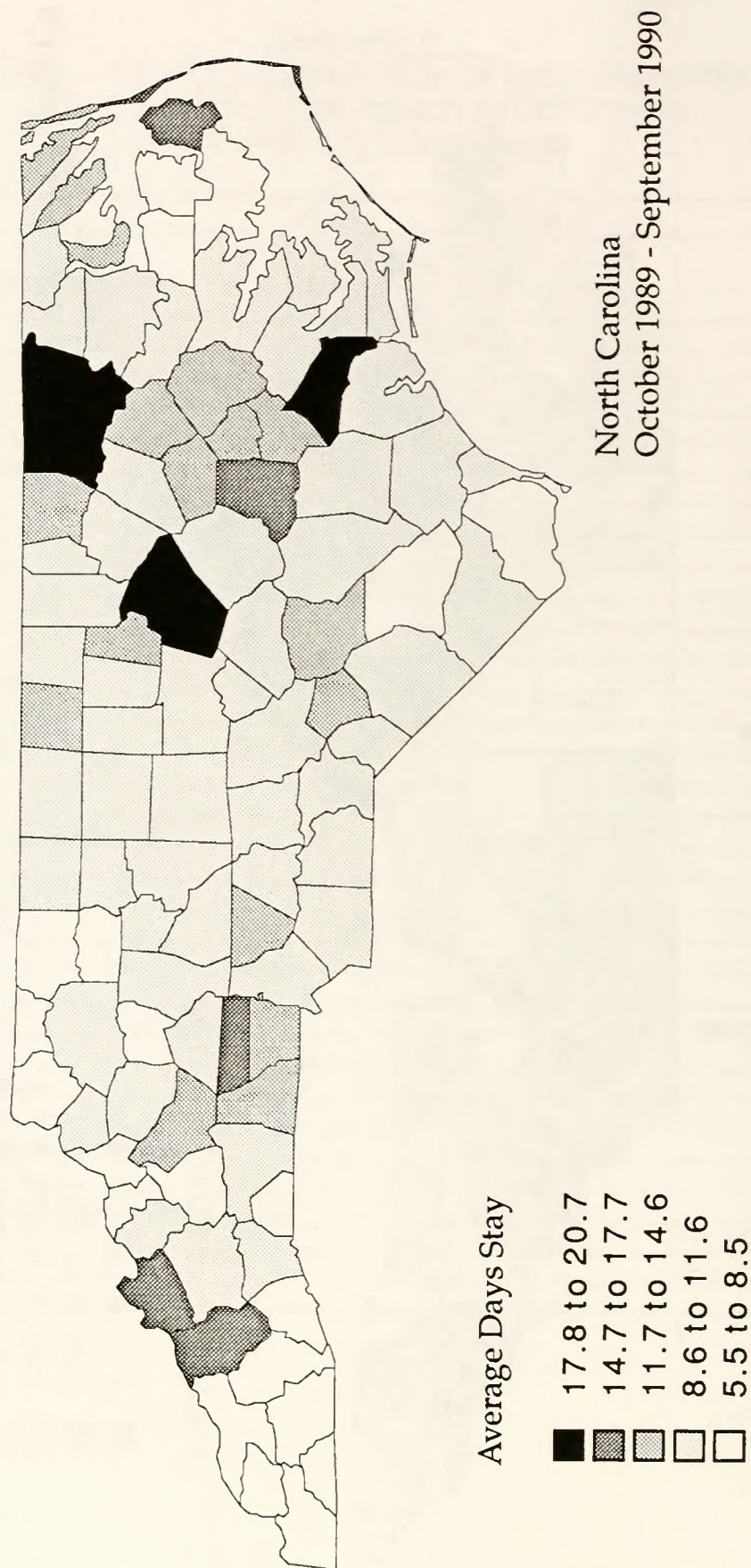


FIGURE 2



# AVERAGE CHARGES PER INPATIENT HOSPITAL STAY NORTH CAROLINA RESIDENTS AGED 65 AND OLDER

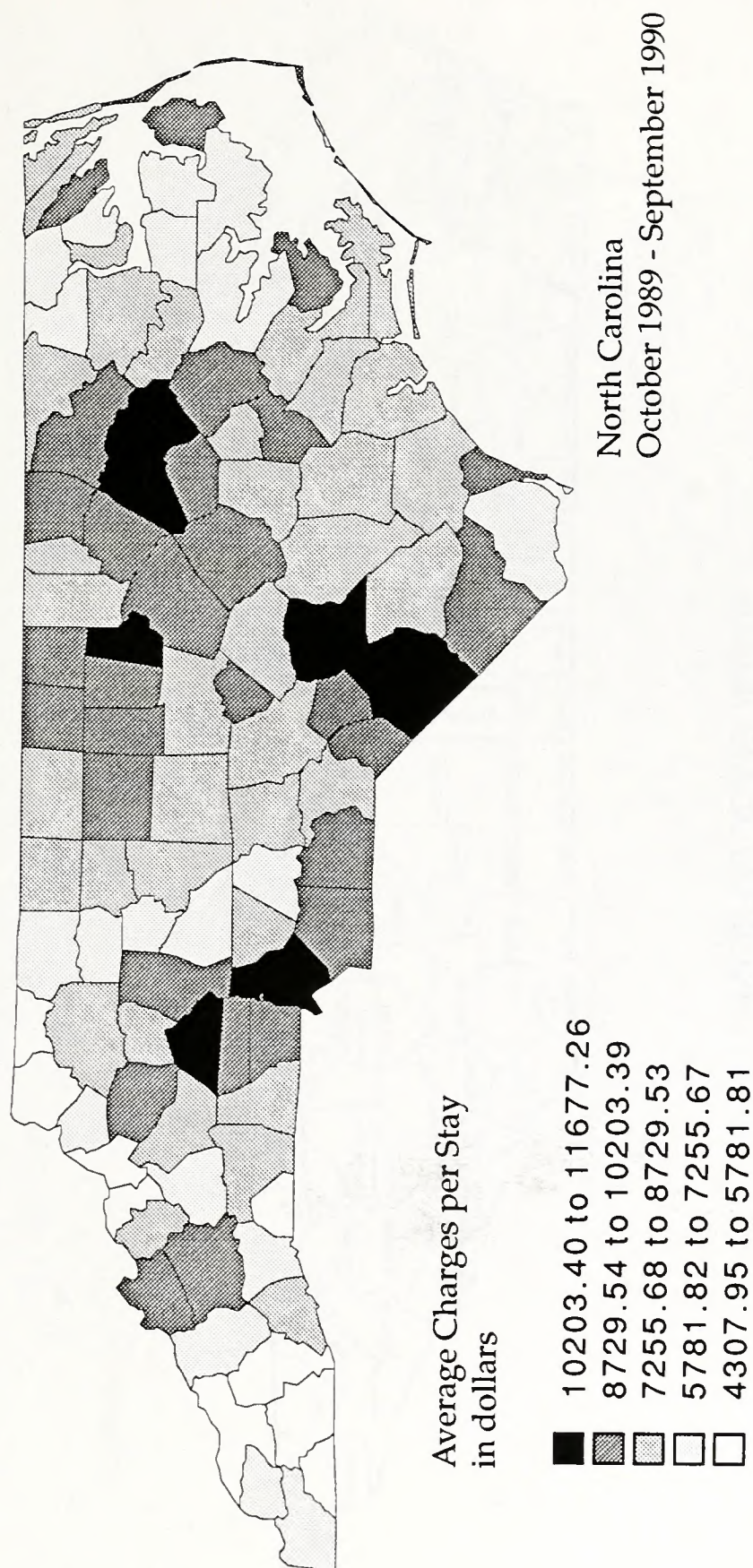


FIGURE 3











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